



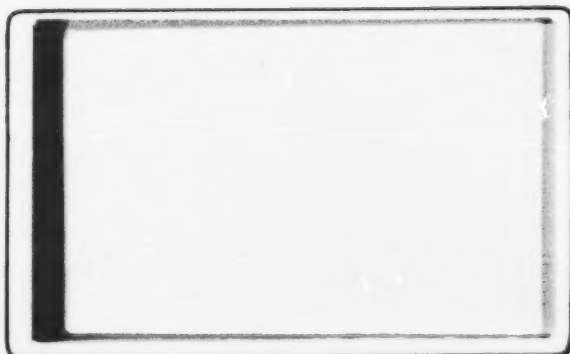
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SURVEY OF BENTHIC INFAUNA
AT BEAUFORT SEA SHOREBASE
SITES

by

T. Sackmann

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ABSTRACT

The Beaufort Sea Shorebase Monitoring Program was initiated in 1982 to identify and monitor impacts of industrial developments on the north coast of Tuktoyaktuk Peninsula. As part of this program, benthic infauna samples were collected from Hutchison Bay, Tuktoyaktuk Harbour and McKinley Bay in 1982 and 1984. Collected organisms were enumerated and identified to species. Overall benthic faunal densities were highest in McKinley Bay and lowest in Tuktoyaktuk Harbour. The dominant species (calculated as percentages of total numbers of individual organisms) in Hutchison Bay were the bivalves Portlandia arctica and Macoma inconspicua in 1982 and 1984 respectively. For the 1982 and 1984 surveys of Tuktoyaktuk Harbour, the dominant species was the bivalve Cyrtodaria kurriana. In McKinley Bay, the dominant species were the polychaete Aglaophamus neotenus in 1982 and worms from the family Cirratulidae in 1984.

RÉSUMÉ

Le programme de surveillance du littoral de la mer de Beaufort a été mis en oeuvre en 1982 afin de déterminer et de contrôler les incidences des développements industriels sur la côte nord de la péninsule de Tuktoyaktuk. Dans le cadre du programme, on a recueilli en 1982 et 1984 des échantillons de l'endofaune de la baie d'Hutchison, du port de Tuktoyaktuk et de la baie de McKinley. On a ensuite dénombré les organismes recueillis et on les a classés par espèces. Dans l'ensemble, l'endofaune était la plus dense dans la baie de McKinley et la moins dense dans le port de Tuktoyaktuk. Les espèces dominantes (déterminées d'après le pourcentage du nombre total d'organismes de l'endofaune) dans la baie d'Hutchison étaient les mollusques bivalves Portlandia arctica et Macoma inconspicua, en 1982 et 1984 respectivement. Lors des études de 1982 et de 1984 sur l'endofaune dans le port de Tuktoyaktuk, l'organisme bivalve Cyrtodaria kurriana représentait l'espèce dominante. Dans la baie de McKinley, le polychète Aglaophamus neotenus dominait en 1982, tandis que des vers de la famille des cirratules prédominaient en 1984.

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1. INTRODUCTION

The Beaufort Sea Shorebase Monitoring Program was initiated in 1982 to monitor the impacts of industrial shorebase development on the marine environment along the Tuktoyaktuk Peninsula. Sediment samples were collected at various beach and marine locations along the Peninsula in 1982, 1983, and 1984. As part of this program, benthic invertebrate samples were collected in Hutchison Bay, Tuktoyaktuk Harbour, and McKinley Bay during 1982 and 1984.

This report lists the species and abundance of invertebrates at the three sampling locations during 1982 and 1984. The report also outlines the dominant species at each sampling station and within each sample area (Hutchison Bay, Tuktoyaktuk Harbour, or McKinley Bay) as a whole.

2. METHODS

2.1 Study Methods

The 1982 benthic faunal samples were collected using a 15 cm x 15 cm brass Ekman grab sampler triggered by a messenger. The sampler was lowered to about one metre above the sediment-water interface, then allowed to free-fall the final metre and penetrate the sediments. Each grab sample was sieved in the field through a 0.5 mm nylon Nitex mesh. The retained sample was washed into a 250 ml Mason jar containing 10% buffered formalin and Rose Bengal stain.

The 1984 benthic infaunal samples were obtained using a 23 cm x 23.8 cm Van Veen grab sampler. The samples were passed through a 0.5mm sieve and retained materials were placed into 250 ml Mason jars containing 10% buffered formalin in seawater. After shipment to the Environmental Protection (Yellowknife) laboratory, the samples were washed free of formalin and transferred to a 70% ethanol solution to prevent decalcification of delicate calcareous structures.

Identification of the benthic invertebrate samples were verified by experts in the field.

2.2 Sampling Locations

The dates and geographic coordinates of benthic invertebrate sampling stations for the 1982 and 1984 programs are presented in Table 1. The locations of sampling stations are displayed in Figures 1 through 7. The 1982 station positions were determined by triangulation using a calibrated hand-held compass. Station position error was estimated to be +/- 500 m in Hutchison and MacKinley Bays and +/- 100 m in Tuktoyaktuk Harbour, where the availability of charted depth contours and onshore reference points

TABLE 1: SAMPLING STATIONS, DATES AND LOCATIONS FOR COLLECTION OF BENTHIC INFAUNA FROM HUTCHISON BAY, TUKTOYAKTUK HARBOUR, AND MCKINLEY BAY, 1982 AND 1984.

Sampling Location	Station No.	Sampling Date	Geographic Coordinates
Hutchison Bay	1	06/08/82	69°45.4' 132°15.0'
	8	08/08/82	69°44.5' 132°12.5'
	9	07/08/82	69°44.5' 132°07.2'
	10	07/08/82	69°45.9' 132°04.4'
	1	28-29/08/82	69°45.4' 132°15.0'
	8	28-29/08/82	69°44.5' 132°12.5'
	9	28-29/08/82	69°44.5' 132°07.2'
	10	28-29/08/82	69°45.9' 132°04.4'
	1	14/08/84	69°45.4' 132°15.0'
	2	14/08/84	69°44.5' 132°12.5'
	3	14/08/84	69°45.33' 132°12.48'
	4	14/08/84	69°45.45' 132°04.0'
Tuktoyaktuk Harbour	6	19/07/82	69°25.97' 132°59.27'
	7	17/07/82	69°24.94' 132°59.27'
	9	17/07/82 and 25/08/82	69°24.57' 132°57.87'
	4	16/08/84	69°27.17' 133°00.05'
	7	16/08/84	69°26.23' 133°57.58'
	14	16/08/84	69°27.13' 133°01.64'
	16	16/08/84	69°26.8' 132°58.99'
	20	16/08/84	69°24.72' 132°58.8'
	25	16/08/84	69°26.75' 132°59.75'
	26	16/08/84	69°25.72' 132°58.91'
	27	16/08/84	69°25.55' 132°57.55'
	28	16/08/84	69°25.13' 132°59.0'
McKinley Bay	4	26/07/82	69°56.9' 131°05.5'
	5	25/07/82	69°57.0' 131°14.0'
	6	25/07/82	69°57.0' 131°14.0'
	12	26/07/82	69°56.8' 131°09.1'
	16	22/08/82	69°54.4' 131°10.5'
	20	22/08/82	69°57.9' 131°11.0'
	5	17/08/84	69°59.2' 131°07.0'
	6	17/08/84	69°57.45' 131°08.5'
	8	17/08/84	69°54.4' 131°09.5'
	12	17/08/84	69°57.75' 131°10.6'

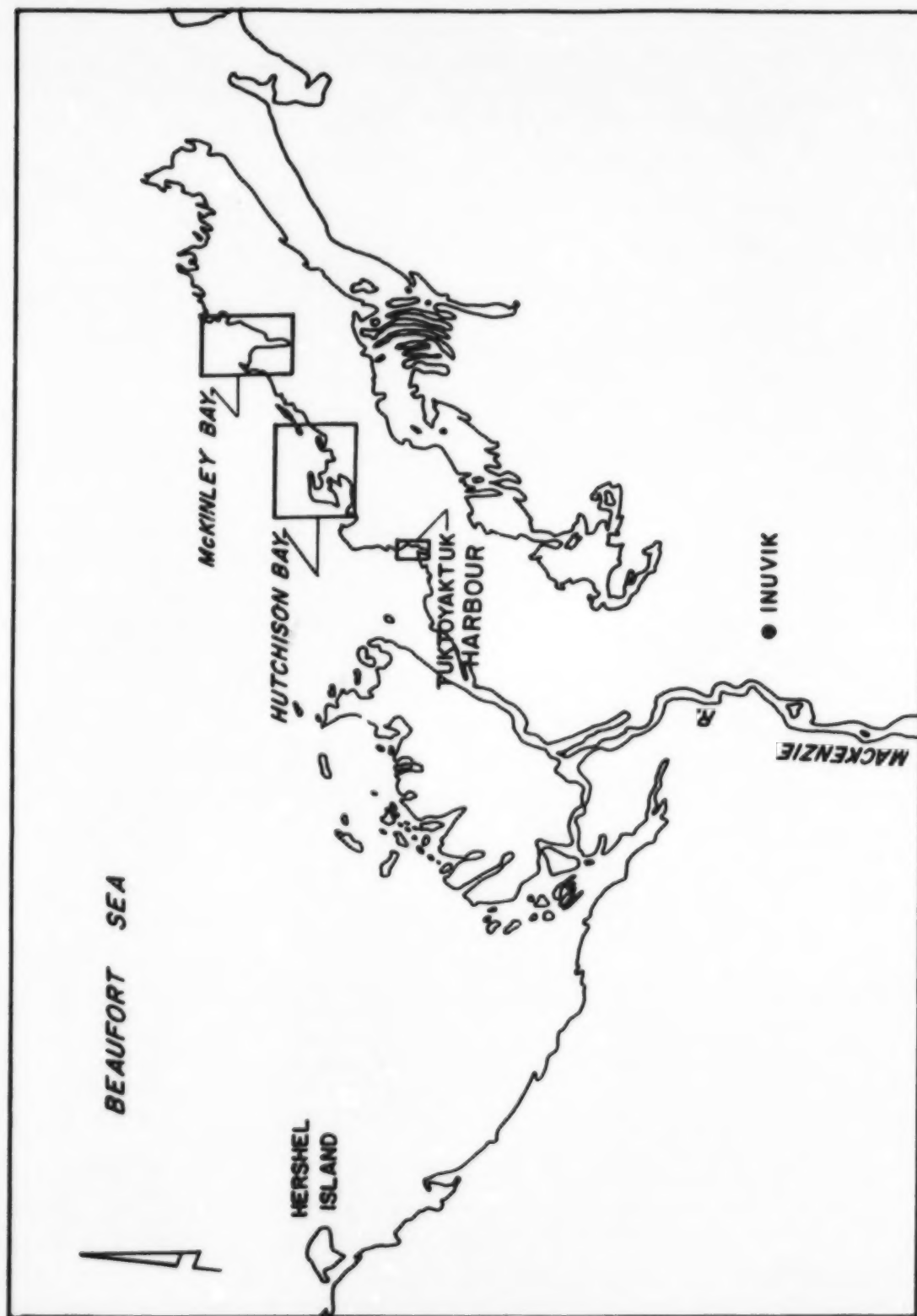


Figure 1. Location of Tuktoyaktuk Peninsula in the Southern Beaufort Sea and Areas Covered by Inset Maps.

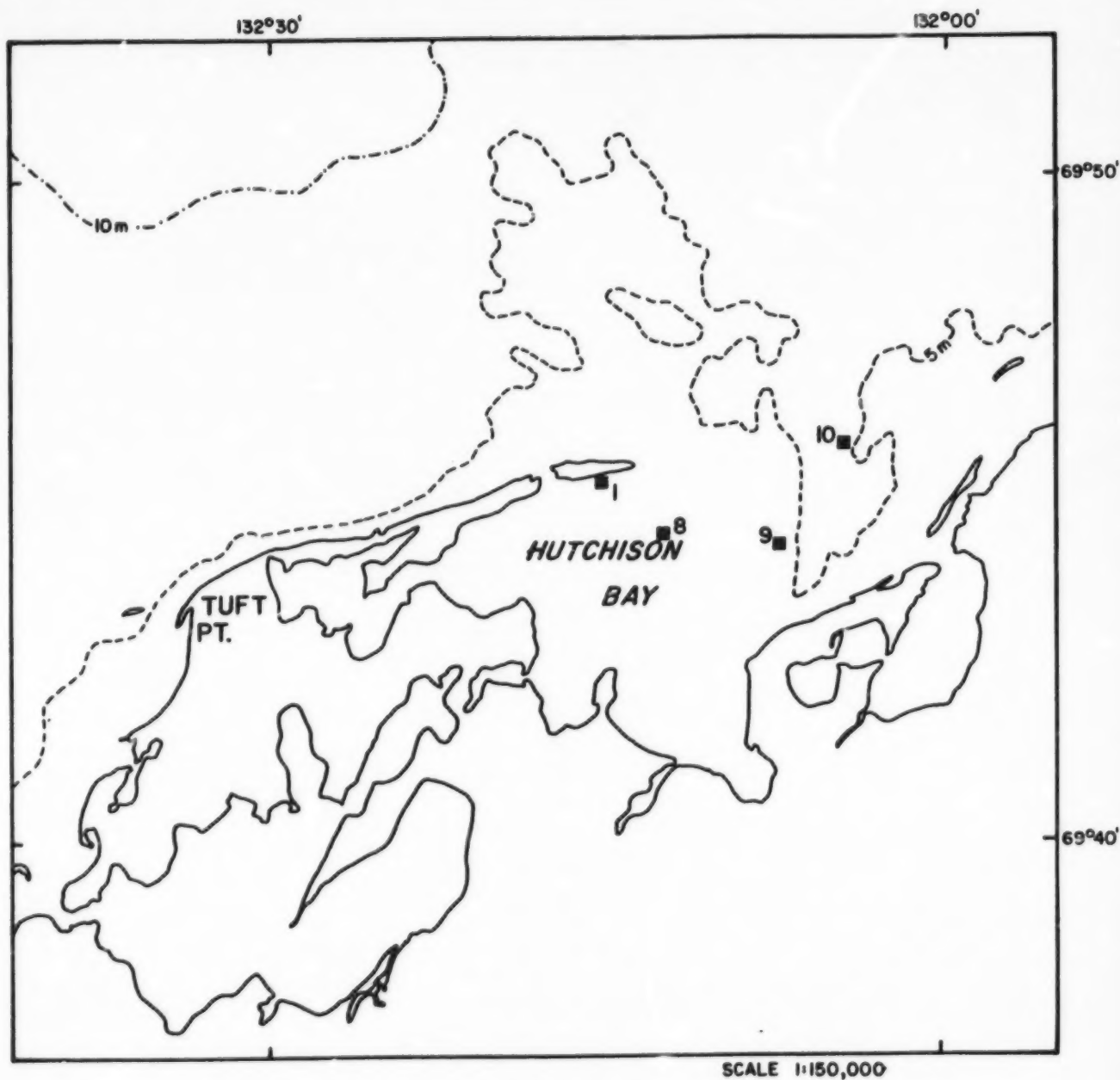


Figure 2. Locations of Hutchison Bay Sampling Stations During the 1982 Reconnaissance Survey.

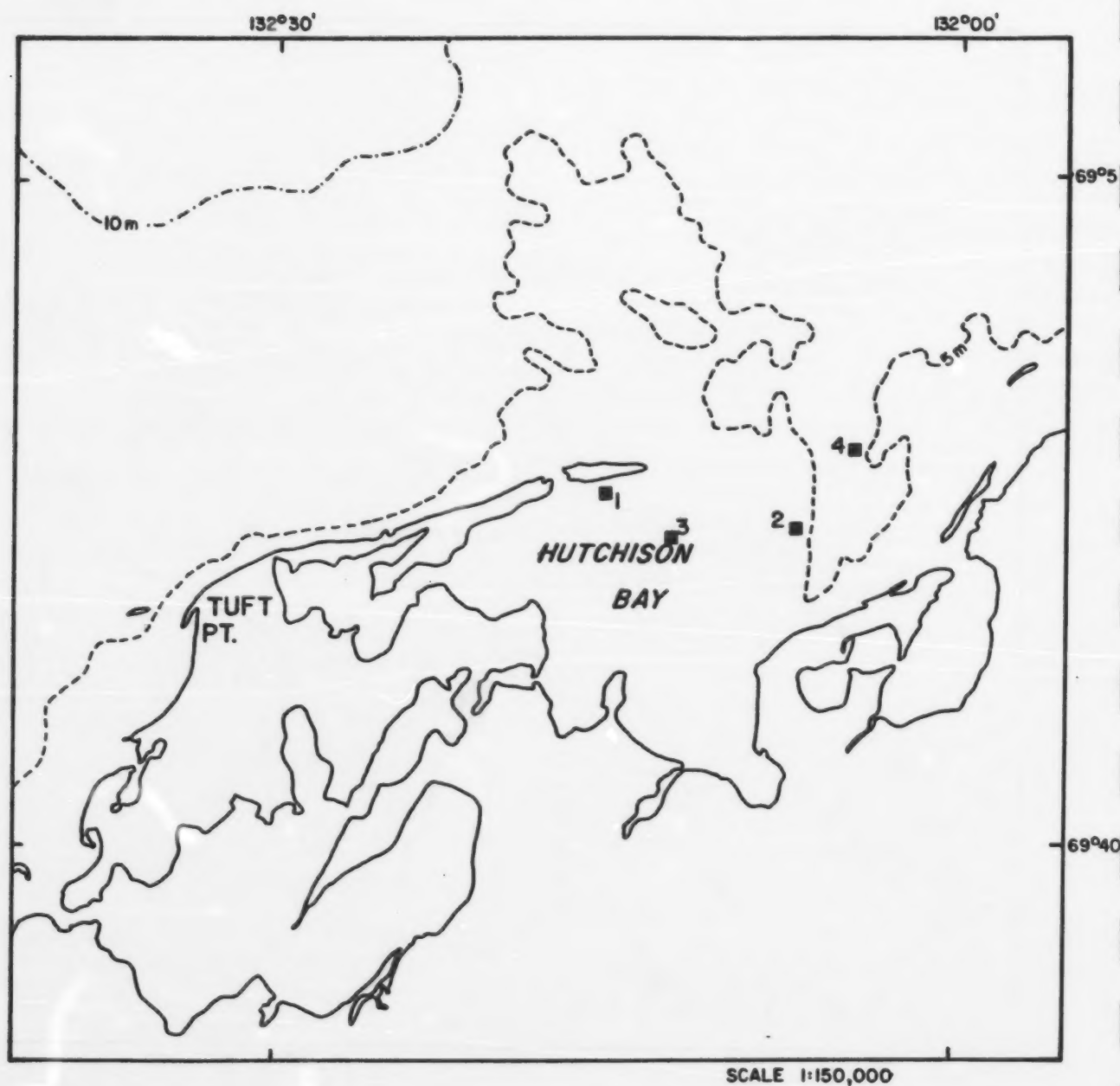


Figure 3. Locations of Hutchison Bay Sampling Stations During the 1984 Reconnaissance Survey.

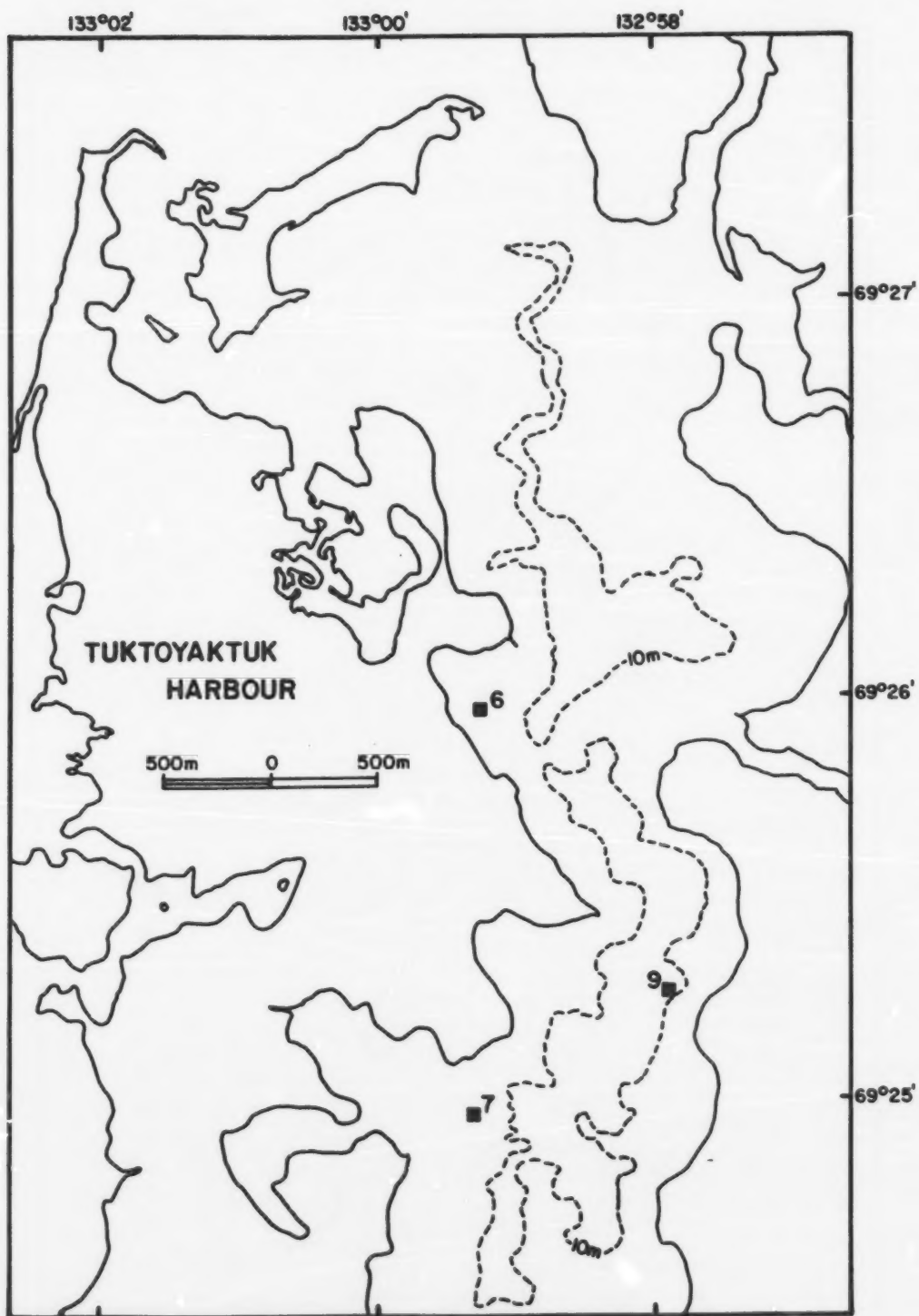


Figure 4. Locations of Tuktoyaktuk Harbour Sampling Stations During the 1982 Reconnaissance Survey.

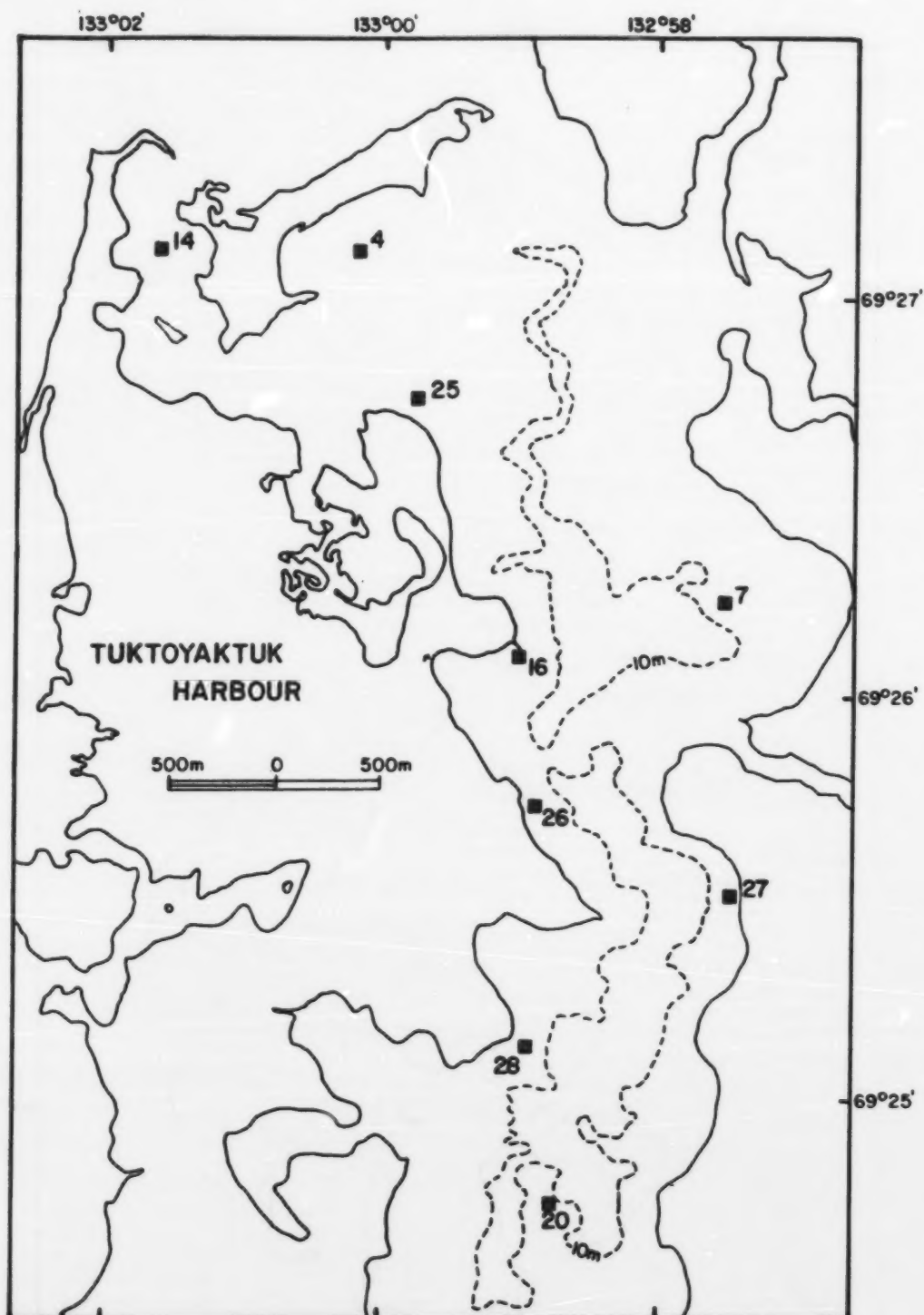


Figure 5. Locations of Tuktoyaktuk Harbour Sampling Stations During the 1984 Reconnaissance Survey.

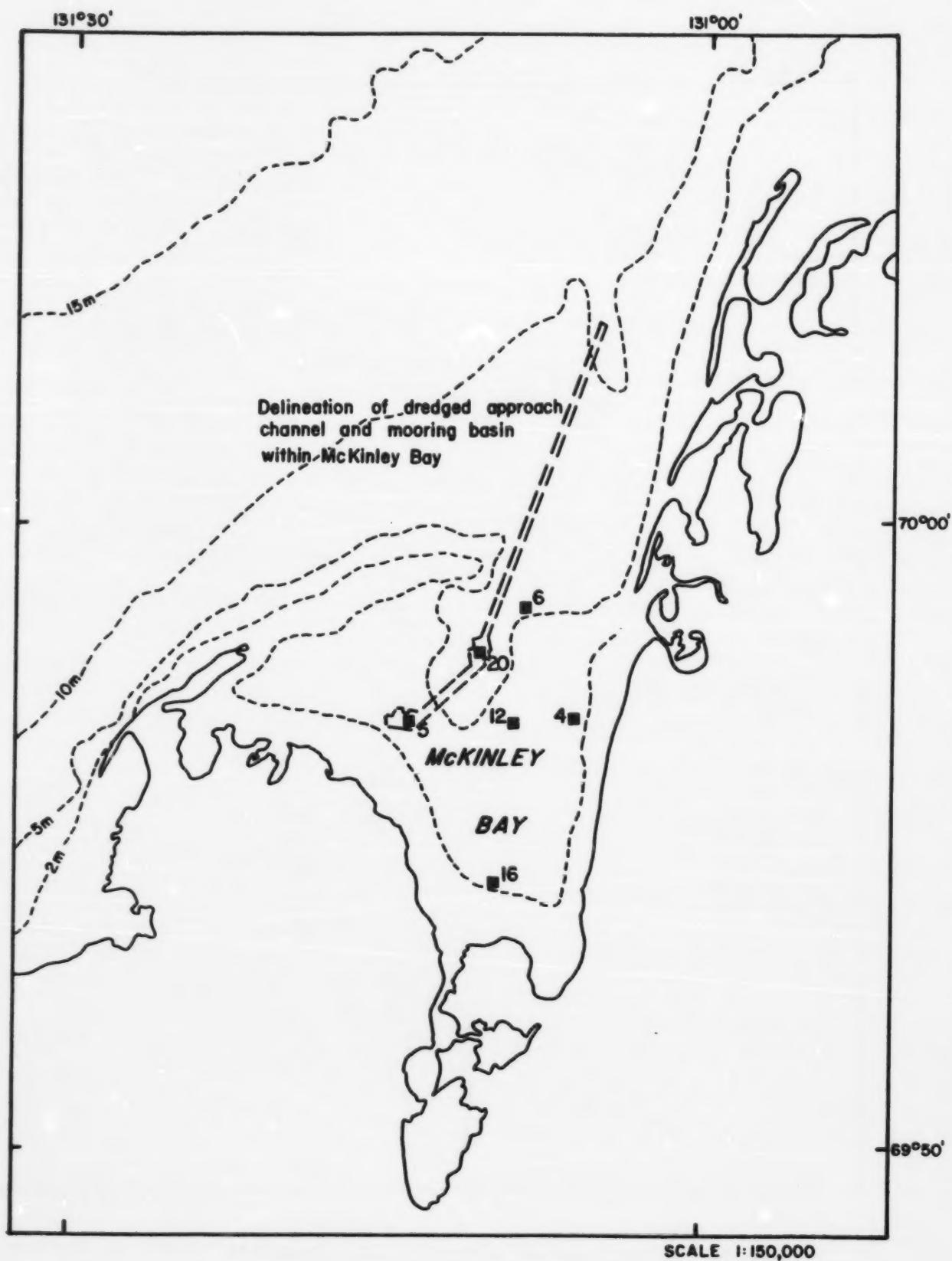


Figure 6. Locations of McKinley Bay Sampling Stations During the 1982 Reconnaissance Survey.

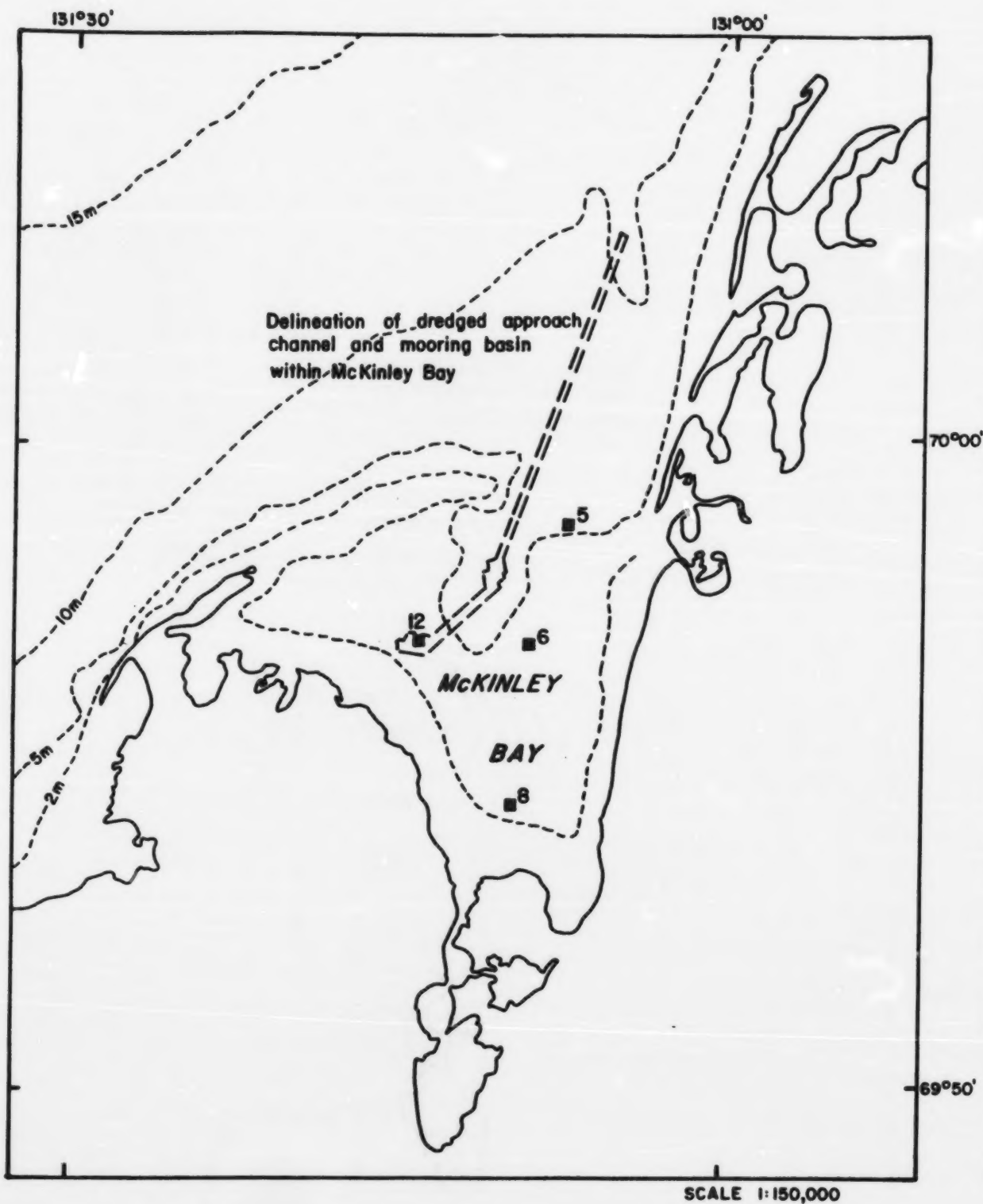


Figure 7. Locations of McKinley Bay Sampling Stations During the 1984 Reconnaissance Survey.

reduced position uncertainty. Positions of 1984 sampling stations in McKinley Bay were estimated from line-of-sight triangulations from onshore reference points; position error was believed to be ± 300 m (R. Shearer, pers. comm. 1986). The 1984 station positions at Hutchison Bay and Tuktoyaktuk Harbour were determined using the radar system aboard the M.V. Neakoolik. Positioning error in Hutchison Bay and Tuktoyaktuk Harbour was estimated at ± 75 m, and ± 20 m respectively (R. Shearer, pers. comm. 1986).

3. BENTHIC INFAUNA

Taxonomic identification and enumeration of the fauna were carried out under contract by Scotia Biological Services Limited. A species list from the 1982 and 1984 sampling programs is presented in Appendix A.

Benthic faunal densities (Table 2) ranged from a mean of 0.0 individuals/station at McKinley Bay (1982) to a mean of 857.0 individuals/station at McKinley Bay (1984). The greatest overall densities of individuals were found in McKinley Bay while the lowest densities were found in Tuktoyaktuk Harbour.

Dominant species (calculated as percentages of total numbers of individuals) for each sample, station, and sampling area are presented in Tables 3 through 5. At the 1982 Hutchison Bay stations, the dominant species were the cumacean Diastylis rathkei, the ostracod Paracyprideis pseudopunctillata, and the bivalve Portlandia arctica. The dominant species for the entire Hutchison Bay sample area was P. arctica, with the measured dominance of these organisms per sample ranging from 41.3% at Station 10 to 74.1% at Station 9. In 1984, dominant species at Hutchison Bay stations were amphipods tentatively identified as Pontoporeia affinis and the bivalve Macoma inconspicua. M. inconspicua was the most prevalent species in the overall Hutchison Bay area in 1984, with the dominance of these organisms per sample ranging from 0.0% at Station 1 to 91.9% at Station 3.

Samples taken from Tuktoyaktuk Harbour stations showed worms of the phylum Sipuncula, the bivalve Cyrtodaria kurriana, and Nematoda to be the dominant organisms. C. kurriana was found to be dominant over the entire Harbour area during 1982; the measured dominance of these organisms per sample ranged from 57.1% at Station 9 to 90.0% at Station 6. The 1984 program showed C. kurriana, flatworms of the class Turbellaria, and M. inconspicua to be the dominant organisms at specific Tuktoyaktuk Harbour stations. C. kurriana was the dominant species for the overall Tuktoyaktuk Harbour sampling area in 1984, with dominance per sample ranging from 0% at Stations 7, 26 and 27 to 100% at Stations 25 and 28.

TABLE 2: BENTHIC INFAUNA DENSITY.

Sampling Location	Sampling Year	Station No.	Number of Replicates	Number of Individual Organisms	Mean S.D. (#individuals/ #replicates)	
Hutchison Bay	1982	1	3	165	55.0	30.8
	1982	8	3	99	33.0	9.5
	1982	9	4	250	62.5	15.4
	1982	10	3	252	84.0	22.9
	1982	1	3	187	62.3	13.8
	1982	8	3	67	22.3	16.3
	1982	9	4	136	34.0	7.0
	1982	10	3	111	37.0	31.2
	1984	1	4	93	23.3	13.9
	1984	2	3	109	36.3	2.5
	1984	3	3	558	186.0	96.5
	1984	4	3	206	102.0	49.2
	1982	6	3	37	12.3	7.8
	1982	7	3	39	13.0	9.5
	1982	9	5	76	15.2	7.1
Tuktoyaktuk Harbour	1984	4	3	111	37.0	12.5
	1984	7	3	5	1.7	1.5
	1984	14	3	89	29.7	29.6
	1984	16	3	31	10.3	1.2
	1984	20	3	109	36.3	14.0
	1984	25	3	25	8.3	4.6
	1984	26	3	9	3.0	5.2
	1984	27	3	7	2.3	2.3
	1984	28	3	1	0.3	0.6
	1982	4	1	0	0	0
McKinley Bay	1982	5	5	74	14.8	16.6
	1982	6	5	490	98.0	42.7
	1982	12	3	551	183.7	135.5
	1982	16	3	13	4.3	2.1
	1982	20	3	132	44.0	9.6
	1984	5	3	202	67.3	88.1
	1984	6	3	493	164.7	108.1
	1984	8	3	2571	857.0	379.0
	1984	12	3	630	210.0	144.4
	1982	12	3	132	44.0	9.6

NOTE: Species present but not enumerated for individual samples were not included in calculations of species density.

TABLE 3: BENTHIC SPECIES DOMINANCE FOR INDIVIDUAL SAMPLES, SAMPLING STATIONS, AND SAMPLING AREA AT HUTCHISON BAY.

Hutchison Bay, 1982
6 - 9 August

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in Hutchison Bay	% Dominance in Hutchison Bay
1 - 1	<u>Macoma inconspicua</u>	55.5	<u>Diastylis rathkei</u>	35.8	<u>Portlandia arctica</u>	29.5 (1982)
1 - 3	<u>Pontoporeia femorata</u>	46.0				
1 - 4	<u>Diastylis rathkei</u>	42.0				
8 - 3	<u>Diastylis rathkei</u>	79.0	<u>Diastylis rathkei</u>	72.7		
8 - 4	<u>Diastylis rathkei</u>	54.1				
8 - 5	<u>Diastylis rathkei</u>	78.1				
9 - 1	<u>Portlandia arctica</u>	56.0	<u>Portlandia arctica</u>	47.2		
9 - 2	<u>Portlandia arctica</u>	48.2				
9 - 4	<u>Paracypriideis pseudopunctillata</u>	36.9				
9 - 5	<u>Portlandia arctica</u>	48.9				
10 - 1	<u>Portlandia arctica</u>	41.3	<u>Paracypriideis pseudopunctillata</u>	40.4		
10 - 2	<u>Portlandia arctica</u>	44.8				
10 - 3	<u>Paracypriideis pseudopunctillata</u>	41.8				

TABLE 3: (CONTINUED)

Hutchinson Bay, 1962
28-29 August

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in Hutchinson Bay	% Dominance in Hutchinson Bay
1 - 1	<u>Diastylis rathkei</u>	48.0	<u>Diastylis rathkei</u>	47.6	<u>Portlandia arctica</u>	27.5 (1962)
1 - 3	<u>Diastylis rathkei</u>	64.1				
1 - 4	<u>Pontoporeia femorata</u>	52.6				
8 - 1	<u>Diastylis rathkei</u>	53.3				
8 - 2	<u>Diastylis rathkei</u>	63.6	<u>Diastylis rathkei</u>	59.7		
8 - 5	<u>Diastylis rathkei</u>	60.9				
9 - 2	<u>Portlandia arctica</u>	72.4				
9 - 3	<u>Diastylis rathkei</u>	36.6	<u>Portlandia arctica</u>	44.1		
9 - 4	<u>Portlandia arctica</u>	48.7				
9 - 5	<u>Portlandia arctica</u>	74.1				
10 - 1	Amureans	100				
10 - 2	<u>Portlandia arctica</u>	54.7	<u>Portlandia arctica</u>	44.1		
10 - 5	<u>Portlandia arctica</u>	52.6				

TABLE 3: (CONTINUED)

Hutchinson Bay, 1984
August

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in Hutchinson Bay	% Dominance in Hutchinson Bay
1 - A	cf. <u>Pontoporeia affinis</u>	80.0	cf. <u>Pontoporeia affinis</u>	40.9	<u>Macoma inconspicua</u>	72.2 (1984)
1 - A2	cf. <u>Pontoporeia affinis</u>	50.0				
1 - B	<u>Pontoporeia sp.</u>	46.8				
1 - C	cf. <u>Pontoporeia affinis</u>	80.0				
2 - A	<u>Macoma inconspicua</u>	70.7	<u>Macoma inconspicua</u>	83.4		
2 - B	<u>Macoma inconspicua</u>	88.9				
2 - C	<u>Macoma inconspicua</u>	88.2				
3 - A	<u>Macoma inconspicua</u>	85.3	<u>Macoma inconspicua</u>	90.3		
3 - B	<u>Macoma inconspicua</u>	91.9				
3 - C	<u>Macoma inconspicua</u>	90.8				
4 - A	<u>Macoma inconspicua</u>	43.9	<u>Macoma inconspicua</u>	56.2		
4 - B	<u>Macoma inconspicua</u>	63.6				
4 - C	<u>Macoma inconspicua</u>	59.4				

TABLE 4: BENTHIC SPECIES DOMINANCE FOR INDIVIDUAL SAMPLES, SAMPLING STATIONS, AND SAMPLING AREA AT TUKTOYAKTUK HARBOUR.

Tuktoyaktuk Harbour, 1982						
Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in Tuk. Harbour	% Dominance in Tuk. Harbour
6 - 3	Oligochaeta	61.9	<u>Cyrtodaria kurriana</u>	48.6	<u>Cyrtodaria kurriana</u>	40.5
6 - 4	<u>Cyrtodaria kurriana</u>	90.0				
6 - 5	<u>Cyrtodaria kurriana</u>	66.7				
7 - 1	<u>Cyrtodaria kurriana</u>	62.5	Nematoda	38.5		
7 - 2	Nematoda	71.4				
7 - 4	Nematoda	41.7				
9 - 1	<u>Cyrtodaria kurriana</u>	58.3	Sipunculidae	60.0		
9 - 2	Sipunculidae	80.0				
9 - 3	<u>Cyrtodaria kurriana</u>	57.1				
9 - 4	<u>Cyrtodaria kurriana</u>	62.5				
9 - 5	Sipunculidae	46.1				

TABLE 4: (CONTINUED)

Tuktuyaktuk Harbour, 1984

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in Tuk. Harbour	% Dominance in Tuk. Harbour
4A	<u>Cyrtodaria kurriana</u>	50.0	<u>Cyrtodaria kurriana</u>	33.3	<u>Cyrtodaria kurriana</u>	56.4
4B	<u>Cyrtodaria kurriana</u>	23.0				
4C	<u>Pontoporeia affinis</u>	32.0				
7A	Unknown number of <u>Allogromia</u> sp. and forams	-----	<u>Cf. Pontoporeia affinis</u>	80.0		
7B	<u>Cf. Pontoporeia affinis</u> <u>Monoculodes intermedius</u>	50.0				
7C	<u>Cf. Pontoporeia affinis</u>	100.0				
14A	<u>Cyrtodaria kurriana</u>	50.0	<u>Cyrtodaria kurriana</u>	57.4		
14B	<u>Pontoporeia sp.</u>	50.0				
14C	<u>Cyrtodaria kurriana</u>	42.8				
16A	<u>Pontoporeia affinis</u>	44.4	<u>Turbellaria</u>	25.0		
16B	<u>Cyclidina sp.</u> <u>Turbellaria</u>	33.3 33.3				
16C	<u>Turbellaria</u>	36.0				

TABLE 4: (CONTINUED)

Tuktoyaktuk Harbour, 1964

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in Tuk. Harbour	% Dominance in Tuk. Harbour
20A	<u>Cyrtodaria kurriana</u>	50.0	<u>Cyrtodaria kurriana</u>	67.8		
20B	<u>Cyrtodaria kurriana</u>	88.0				
20C	<u>Cyrtodaria kurriana</u>	69.0				
25A	<u>Cyrtodaria kurriana</u>	92.3	<u>Cyrtodaria kurriana</u>	92.0		
25B	<u>Cyrtodaria kurriana</u>	92.3				
25C	<u>Cyrtodaria kurriana</u>	100.0				
26A	Unknown number of <u>Allogromia</u> sp.	----	<u>Macoma inconspicua</u>	33.3		
26B	No organisms present	----				
26C	<u>Macoma inconspicua</u>	33.3				
27A	<u>Macoma inconspicua</u>	60.0	<u>Macoma inconspicua</u>	66.6		
27B	<u>Macoma inconspicua</u>	100				
27C	<u>Monoculodes intermedius</u>	100.0				
28A	No organisms present	----				
28B	<u>Cyrtodaria kurriana</u>	100	<u>Cyrtodaria kurriana</u>	100.0		
28C	No organisms present	----				

TABLE 5: BENTHIC SPECIES DOMINANCE FOR INDIVIDUAL SAMPLES, SAMPLING STATIONS, AND SAMPLING AREA AT MCKINLEY BAY.
McKinley Bay, 1982

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in McKinley Bay	% Dominance in McKinley Bay
4 - 5	No organisms present	----	-----	----	<u>Oglaophamus neotenus</u>	41.9
5 - 1	No organisms present	----				
5 - 2	<u>Gottione cirrosa</u>	33.3	<u>Gottione cirrosa</u>	18.9		
5 - 3	<u>Gottione cirrosa</u>	32.6				
5 - 4	<u>Ceullerfella sp.</u>	26.7				
5 - 5	<u>Cirratulidae</u>	42.9				
6 - 1	<u>Oglaophamus neotenus</u>	83.9			<u>Oglaophamus neotenus</u>	72.0
6 - 2	<u>Oglaophamus neotenus</u>	74.4				
6 - 3	<u>Oglaophamus neotenus</u>	75.5				
6 - 4	<u>Oglaophamus neotenus</u>	64.8				
6 - 5	<u>Oglaophamus neotenus</u>	40.4				
12 - 2	<u>Prionospio cirrifera</u>	48.5	<u>Prionospio cirrifera</u>	30.4		
12 - 4	<u>Prionospio cirrifera</u>	33.6				
12 - 5	<u>Oglaophamus neotenus</u>	38.0				

TABLE 5: (CONTINUED)

McKinley Bay, 1982

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in McKinley Bay	% Dominance in McKinley Bay
16 - 1	<u>Prionospio cirrifer</u>	50.0				
	<u>Scolecoplepis sp.</u>	50.0				
16 - 3	<u>Eteone longa</u>	33.3	<u>Eteone longa</u>	30.8		
	<u>Prionospio cirrifer</u>	33.3	<u>Prionospio cirrifer</u>	30.8		
16 - 4	<u>Eteone longa</u>	40.0				
20 - 1	<u>Prionospio cirrifer</u>	60.0	<u>Prionospio cirrifer</u>	48.5		
20 - 2	<u>Prionospio cirrifer</u>	56.8				
20 - 4	<u>Capitella capitata</u>	30.0				

McKinley Bay, 1984

5	<u>Ampharete vega</u>	35.0	<u>Ampharete vega</u>	24.8	<u>F. Cirratulidae</u>	28.8
5 - B	<u>Ampharete vega</u>	25.0				
5 - C	<u>F. Cirratulidae</u>	23.0				
	<u>Caulerella sp.</u>	23.0				
6 - A	<u>Pygospio elegans</u>	78.5	<u>Pygospio elegans</u>	66.1		
6 - B	<u>Priscillina cumata</u>	38.7				
6 - C	<u>Pygospio elegans</u>	78.1				

TABLE 5: (CONTINUED)

McKinley Bay, 1984

Station Sample #	Dominant Species (Sample)	% Dominance in Sample	Dominant Species at each Station	% Dominance at Each Station	Dominant Species in McKinley Bay	% Dominance in McKinley Bay
8 - A	<u>Polydora sp.</u>	20.6	F. Cirratulidae	37.8		
8 - B	F. Cirratulidae	45.5				
8 - C	F. Cirratulidae	39.5				
12 - A	<u>Polydora sp.</u>	75.6	<u>Polydora sp.</u>	73.0		
12 - B	<u>Polydora sp.</u>	84.3				
12 - C	<u>Polydora sp.</u>	69.3				

NOTE:

Species present but not enumerated for individual samples were not included in calculations of species dominance.

Finally, sampling at McKinley Bay in 1982 showed the polychaetes Gattyana cirrosa, Aglaophamus neotenus, Prionospio cirrifer, and Eteone longa to be most prevalent at individual stations. A. neotenus was the dominant species for the McKinley Bay location with dominance per sample ranging from 0% at Stations 4, 5, 16, and 20 to 83.9% at Station 6. The 1984 McKinley Bay program showed the polychaete species Ampharete vega, Pygospio elegans, Polydora sp., and worms from the family Cirratulidae to be dominant at specific stations. Cirratula were the dominant organisms in McKinley Bay as a whole; measured dominances ranged from 0.0% at Stations 6 and 12 to 45.5% at Station 8.

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APPENDIX A

BENTHIC INFAUNA DATA

(Numbers of Organisms Found
at Each Sampling Station)

TUKTOTIAKTUK HARBOUR, 1962

	SAMPLE STATIONS										
	6-3	6-4	6-5	7-1	7-2	7-4	9-1	9-2	9-3	9-4	9-5
MOLLUSCA											
<u>Bivalvia</u>											
<i>Macoma inconspicua</i>	2	1		1							1
<i>Cyrtodaria kurriana</i>	5	9	4	5	2	2	7	3	8	5	10
CRUSTACEA											
AMPHIPODA											
<i>Pontoporeia femerata</i>	1					1				1	
cf. <i>Pontoporeia affinis</i>						7					
<i>Monoculodes intermedius</i>			2			1					
ISOPODA											
<i>Saduria entomon</i>							1				
MYSIDACEAS									1		
NEMERTEANS				2		3					
NEMATODA				*	5	10					3
OLIGOCHAETAS	13										
SIPUNCULIDS							4	12	6	2	12

* Species identified but not enumerated.

NOTCHISON BAY 6-9 AUGUST, 1962

	SAMPLE STATIONS												
	1-1	1-3	1-4	8-3	8-4	8-5	9-1	9-2	9-4	9-5	10-1	10-2	10-3
MOLLUSCA													
<i>Portlandia arctica</i>				1	6	2	46	28	22	22	31	30	38
<i>Macoma inconspicua</i>	15	9	11	2	2	1	1	1		1		1	
<i>Macoma calcarata</i>			2										
<i>Cyrtodaria turriana</i>			5	1	3	2	4	3	2	5	1	3	1
PROTISTA													
<i>Allogromia</i> sp.							*						
<i>Elphidium</i> sp.							*						
Cnidaria													
<i>Garvea groenlandica</i>						1	24	21	16	13	11	1	16
CRUSTACEA													
<i>Paracyprideis pseudopunctillata</i>									24		28	28	46
<i>Rabillimys septentrionalis</i>												1	1
<i>Diestyllis retikel</i>	7	15	37	34	13	25	2	1	1		4	1	
<i>Pontoporeia femorata</i>	5	23	21	1									
<i>Orchomene</i> sp.		3	8	1		1							
<i>Monoculopsis longicornis</i>			4										1

WITCHISON BAY 6-9 AUGUST, 1982

SAMPLE STATIONS

1-1	1-3	1-4	8-3	8-4	8-5	9-1	9-2	9-4	9-5	10-1	10-2	10-3
			1			5	4	4				3

NEMATODA

GASTROTRICHS

* Species identified but not enumerated.

WITCHISON BAY 28-29 AUGUST, 1962

	SAMPLE STATIONS												
	1-1	1-3	1-4	8-3	8-4	8-5	9-1	9-2	9-4	9-5	10-1	10-2	10-3
MOLLUSCA													
<i>Portlandia arctica</i>	1			1		4	21		19	20		29	30
<i>Macoma inconspicua</i>	6	1	4	2	2	4		14	1				
<i>Cyrtodaria kurriana</i>	2			1	1	3	3	7				2	1
PROTISTA													
<i>Allogromia</i> sp.												*	
<i>Elphidium</i> sp.													*
CYTODARIA													
<i>Garveia groenlandica</i>							*		18	7		21	22
CRUSTACEA													
<i>Rabillia septentrionalis</i>													1
<i>Seduria entomon</i>												1	
<i>Diatylis retikel</i>	25	50	14	8	7	25	2	15					1
<i>Pontoporeia femorata</i>	16	24	30			1	1	3					
<i>Orchomene</i> sp.		2	3	1	1	1		2					
<i>Monoculopsis longicornis</i>	2	1	5			2							
<i>Dulichia</i> sp.													
HEMERTINEA			1	2		1			1		1		
PSEUDOCOELOMATES													
NEMATODA													
<i>GASTROTRICHA</i>												1	
							2						

McKENLEY BAY, JULY-AUGUST, 1962

	SAMPLE STATIONS																			
	4-5	5-1	5-2	5-3	5-4	5-5	6-1	6-2	6-3	6-4	6-5	12-2	12-4	12-5	16-1	16-3	16-4	20-1	20-2	20-4
F. POLYNOIDAE																				
Antimoeilla sarsi								1				2	22			12		3		
Gattyana cincinnata	3		14				1													
F. SIGALIONIDAE																				
Phloe minuta											2	7								
F. PHYLLODOCIDAE																				
Eteone longa	2	1	2	1				2			4	4	2		2	2	2	5	7	
Phyllodoce groenlandica							1	2	3	4	3	5	3					1	1	
F. MESIONIDAE																				
Cestalia aphroditoides															1					
F. NEPTHYIDA																				
Nephtys ciliata										2	2								1	
Aglaophamus neotenus	1		2				89	119	80	46	19	20	9	130		7	6	7		
Nephtys longisetosa												7	1							
Nephtys sp.							1							3	1					
F. ORBINIIDAE																				
Scoloplos armiger																				
Aricidea sp.																				

ROCKLEY BAY, JULY-AUGUST, 1962
(Continued)

	4-5	5-1	5-2	5-3	5-4	5-5	6-1	6-2	6-3	6-4	6-5	12-2	12-4	12-5	16-1	16-3	20-1	20-2	20-4
F. SPIONIDAE																			
<i>Polydora</i> spp.			1	10							5	23	71						
<i>Pygospio elegans</i>												1							
<i>Prinospio cirrifera</i>			6	3		13	29	23	13	17	49	37	74	1	2	1	33	21	10
<i>Scolecopsis</i> sp.			3													1	1		
<i>Scolecoplepides</i> sp.			2												1	1	1	1	
<i>Cirratulidae</i>			1	3		2	2	1		8	4	11							
<i>Caulerfellia</i> sp.			4	1				1			2	1							
<i>Chaetozone setosa</i>											2	1							
CAPITELLIDAE	1	9						3		6	4								
<i>Capitella capitata</i>				1							2	3					3	12	
F. AMPHIPTENIDAE																			
<i>Pectenaria hyperborea</i>						1		1				1		4					
F. AMPHIPTENIDAE																			
<i>Ampharete vega</i>	1										3	2	1						
<i>Sebellia</i>											3		12						
<i>Laonome kroyeri</i>											1		2						
<i>Orfopsis gracilis</i>												6							
<i>Potamilla neglecta</i>																		2	

MITCHELLSON BAY, AUGUST, 1964

	1A	1A2	1B	1C	2A	2B	2C	3A	3B	3C	4A	4B	4C
SAMPLE STATIONS													
PROTISTA													
Allogromia sp.	*	*									*	*	*
Elphidium sp.	*	*	*			*	*	*	*	*	*	*	*
CHITONIA													
Garveia groenlandica					1						1		
MOLLUSCA													
Bivalvia													
Stenopsis alaskana								1	3	5	2	1	7
Portlandia arctica													
Lillona inconspicua	1	2			29	32	30	76	172	256	36	42	94
Macoma calcarata								2					
Cyrtodaria kurriana	1	3			4	1		1	2		4	5	17
CRUSTACEA													
Rabillia septentrionalis						1		*	*	*			*
Heterocypris sorbyana			1	1	2		1	*	*	*	*	*	*
Paracypris pseudopunctillata								*	*	*	*	*	*
Cytheropteron sp.								1	*	*		*	*

* Species identified but not enumerated.

MUTCHISON BAY, AUGUST, 1964
(Continued)

	1A	1A2	1B	1C	2A	2B	2C	3A	3B	3C	4A	4B	4C
Unidentified Ostracoda				1			1	*					
CUMACEA						2							
Diastylis rathkei				1				1	1	6	23	9	31
ISOPODA													
Seduria entomon			1	1				1				1	
AMPHIPODA													
Priscillina armata		14	7	1									
cf. Pontoporeia affinis	4	18		16				2	3	2			
Pontoporeia sp.			15		3		2			1			
Pontoporeia femorata								3	6	10	8	4	4
Monoculopsis longicornis		3		1							2		1
OTHER ORGANISMS			3			1		1		1	4	2	3

* Species identified but not enumerated.

TURTOYAKTUK HARBOUR, 1964

	4A	4B	4C	7A	7B	7C	14A	14B	14C	16A	16B	16C	20A	20B	20C
SAMPLE STATIONS															
SCAPHANDRIDAE															
<i>Cyllichna</i> sp.										3	4	1			
PELECYPODA															
<i>Portlandia arctica</i>		1	4									1		1	
<i>Macoma inconspicua</i>	10	10	5				13	1	1					2	3
<i>Macoma calcareo</i>															
<i>Cyrtodaria kurriana</i>	18	12	7				31	1	18	1		1	16	22	36
AMPHIPODA															
<i>Pontoporeia femorata</i>		8											9		5
cf. <i>Pontoporeia affinis</i>	5	11	8		1	3	9			4		2			
<i>Pontoporeia</i> sp.	2	2					1	2				1			5
<i>Monoculopsis longicornis</i>		2	1						2				1		
<i>Monoculodes intermedius</i>		3			1		1		1		1	1	6		3

TURTLETAGUE HARBOR, 1964
(Continued)

	4A	4B	4C	7A	7B	7C	14A	14B	14C	16A	16B	16C	P0A	P0B	P0C
ISOPODA															
Seduria entomon = Mesidotea entomon						1				1					
TURBELLARIA											4	4			
NEMATEANS								1							
NEMATODES											1				
SIPUNCULIDS							6								
LARVACEANS											2				
Priitilleria sp.															
FORAMS															
Allogromia sp.															
Unidentified forams															
OSTRACODS															
Meterecyprideis sorbyana		1													

* Species identified but not enumerated.

TURKOVAKTAR HARBOR, 1964
(Continued)

	25A	25B	25C	SAMPLE STATIONS				27A	27B	27C	28A	28B	28C
				26A	26B	26C							
SCAPHANDRIDAE													
Cyllisus sp.								1					
PELECYPODA													
Pertlandia arctica	1												
Macoma inconspicua						3		3	1				
Macoma calceus						1							
Cyrtodaria kurriana	10	10	3									1	
AMPHIPODA													
Pontoporeia femorata													
cf. Pontoporeia affinis						1							
Pontoporeia sp.						2							
Monoculopsis longicornis													
Monoculodes intermedius						1				1			

TUKTOYAKTUK HARBOUR, 1964
(Continued)

	SAMPLE STATIONS											
	25A	25B	25C	20A	26B	26C	27A	27B	27C	28A	28B	28C
ISOPODA												
Saduria entomon		1				1	1					
TURBELLARIA												
NEMERTEANS												
NEMATODES												
SIPUNCULIDS												
LARVACEANS												
Fritillaria sp.												
FORAMS												
Allogromia sp.	*	*	*	*		*			*			*
Unidentified forams						*			*			*
OSTRACODS												
Heterocypris sorbyana												

* Species identified but not enumerated.

McKINLEY BAY, 1984

	5	5B	5C	SAMPLE STATIONS				6A	6B	6C	8A	8B	8C	12A	12B	12C
MOLLUSCA																
<u>Bivalvia</u>																
F. Steneopsidae	1															
Nucula belloti																
Yoldiella intermedia		2								1	2	3	13			
Macoma inconspicua								1			4	11	8			
Cyrtodaria kurriana			1							1	1	10	13			
UNIDENTIFIED GASTROPODA		7						2	1							
CRUSTACEA																
<u>OSTRACODA</u>																2
Cytheropteron sp.																
Heterocyprideis sorbyana		4									3					
Paracyprideis pseudopunctillata		*								1						
Rabillim's seprenterionalis		3														

* Species identified but not enumerated.

McKINLEY BAY, 1964
(Continued)

	5	5B	5C	6A	6B	6C	8A	8B	8C	12A	12B	12C
SAMPLE STATIONS												
COPEPODA												
Harpecticoloid sp.		1										
CUMACEA												
Diatylis sp. (?)					5							
ISOPODA												
Chiridotae sp.		1										
Idotea sp.					2							
AMPHIPODA												
Priscillina armata		3			58							
Orchomene sp.		1										
Monocaulopsis longicornis		4			13							
FORAMINIFERA												
Allogromia latifollaris (?)							1					
F. POLYROIDAE												
Antinoella sarsi								3				5
Gattyana cirrosa							3	8	11	6		
F. SIGALIONIDAE												
Phloe minuta												2

McKINLEY BAY, 1964
(Continued)

	SAMPLE STATIONS										
	5	5B	5C	6A	6B	6C	8A	8B	8C	12A	12B 12C
F. PHYLLODOCUMIDAE											
Eteone longa	2	6	1	4	4	2	6	10	17	8	1 11
Phyllodoce groenlandica											1
F. NESIDIIDAE											
Castalia aphroditoides							49	75	65	1	
F. NEPTHYIDAE											
Aglaophamus neotenus						1	18	24	24	3	4
Nephtys sp.											
F. SPHERODORIDAE											
Sphaerodoropsis sp.							7	15	2		
F. ORBINIIDAE											
Scoloplos armiger											
F. SPIONIIDAE											
Polydora spp.		18	1				103	191	113	186	4 231
Pygospio elegans		1		219	57	50	24	17	14	1	

MCKINLEY BAY, 1964
(Continued)

	5	58	5C	SAMPLE STATIONS							8C	8B	12A	12B	12C
				6A	6B	6C	6A	6B	6C	6A	6B	6C	6A	6B	6C
<i>Prionospio cirrifera</i>	3	20	2	5	3	3	100	193	157	33	6	41			
<i>Scolecopsis</i> sp.	1														
<i>Scolecoplepides</i> sp.	2	2	1				1	3		1		2			
<i>Paraspio wireni</i>					1										
<i>Spio filicornis</i>															
<i>Cirratulidae</i>	5	19	3	38		2	77	571	323	1		10			
<i>Caulerfiella</i> sp.	1	31	3	6			10	64	15						
F. CAPITELLIDAE															
<i>Capitella capitata</i>					2	3	1	4		4		28			
F. AMPHARETIDAE															
<i>Ampharete vega</i>	7	42	1	4	1		11	8	12						
F. TEREBELLIDAE															
<i>Terebellides stroemf</i>							3								
<i>Nicoles venustula</i>							3	8	6						
F. SABELLIDAE															
<i>Laonome kroyeri</i>								8	18						